

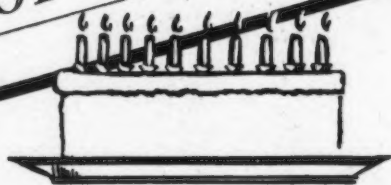
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FOR (Bottles of 100 wafers \$ 1.50 Each
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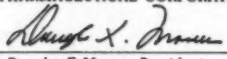
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By 
Douglas F. Mooers, President



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THE CALIFORNIA VETERINARIAN

SEPTEMBER-OCTOBER, 1948

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EXECUTIVE SECRETARY'S REPORT

Condensed Report of the Executive Secretary to the California State Veterinary Medical Association's Annual Convention, June 19, 1948

I wish at this time to express my grateful appreciation for the honor of being your executive secretary. The position is an extremely responsible one, and I am fully aware that the pace set this past year must be maintained; and that it is an everlasting task to keep up the high standard we have set ourselves. I can assure you, I will do my part. Please remember that the facilities of the office and my personal services are at your disposal at all times.

A year ago the California State Veterinary Medical Association appointed an Executive Secretary, and through its Executive Committee outlined a program of progress. The Executive Committee gave him full power to go ahead and see how much could be accomplished from June, 1947, to June, 1948. He was expected to be of help to individual members, to build up funds to strengthen the financial position of the Association, appropriate these funds to run the Association's affairs, to increase the membership, to launch an Association magazine, and to improve public relations.

The individual members have been given group liability and group health and accident insurance. This is a cash value given to the member, earned by savings made possible in low premium rates through concerted group action. The savings actually exceed the amount of Association dues. In the first four months \$1049.94 was paid by National Casualty to our members. (Contact your secretary's office if interested in either of these policies.)

The Treasurer's report showed a substantial gain over your previous year. The membership was increased from 421 members in June, 1947, to 570 members with 21 applications to be passed this June, 1948. There were 190 members who had not paid their dues, June, 1947; now there are only 63 delinquent members. Over 70 per cent of the membership paid their dues promptly. Two life memberships were conferred: Dr. C. M. Haring and Dr. G. W. Closson. Four resignations were received this year, one accepted. Dr. S. T. Michael has already had a conference with me on building up the membership, and if every member would lend a helping hand in stimulating interest during the coming year we should reach a new high of 800 members.

A few words may be spoken here regarding the magazine. First of all, be sure to back our advertisers, they make the magazine possible. It has been stated that our publication is among the top veterinary medical publications in the United States for format, informative articles, and over-all quality. On the practical side advertisers of service and prod-

ucts essential to the veterinary profession find it a valuable sales media. This confidence is reflected in the revenue from their advertising. Dr. A. G. Carr, Administrator, Division of Animal Industry, State Department of Agriculture, Sacramento, has used the magazine as the official organ for publishing the report of Animal Disease. The Board of Examiners in Veterinary Medicine through Dr. Gaylord K. Cooke, their secretary, used THE CALIFORNIA VETERINARIAN for their annual report to the profession. This action met with extremely favorable comment. The next issue [the current issue] will carry an article by Dr. Theodore Brunner of Switzerland, sent in by the Hooper Foundation for Medical Research, University of California. We were proud they chose our publication to print this article. Articles read at the Mid-Winter Conference and at this Annual Meeting are carried in condensed form to give those who could not attend an opportunity to absorb the material brought up at the meetings. The "Opportunity" column has been a benefit to those looking for positions, or wishing to secure help and doctors wishing to buy or sell practices or equipment. We exchange publications with veterinary medical journals in Brazil, Canada, India, Australia, South Africa and Europe. Most of these exchanges were inaugurated by the foreign journals.

I have been in constant touch with local associations, and have attended their meetings as often as possible during the year. Many problems have come up during the year, but we have settled them with amicability for all concerned. The Association is now assuming its full responsibility both to the public and its individual members. The work started this past year must continue for prolonged better relations between the veterinary profession and the public, for continued increase in profit, security, and welfare of both.

The following members of the California State Veterinary Medical Association registered at the annual June meeting, held in San Luis Obispo. Doctors Kenneth McKay, G. K. Cooke, E. G. LeDonne, A. E. Wardlow, John L. Tyler, G. W. Closson, Joseph M. Arburua, Charles J. Parshall, Mary K. Dunlap, Oscar J. Kron, Floyd H. White, A. M. McCapes and wife, Charles H. Reid and wife, E. E. Jones, Fred B. Pulling, Francis G. Ward, F. P. Wilcox, E. F. Sheffield, Reginald A. Stocking, C. E. Wicktor, S. T. Michael, George Nelson, H. I. Ott, H. S. Cameron, E. C. Baxter, Eugene Jones, William K. Riddell, W. H. Casselberry, Leo Henrich, R. L. Griffith, J. W. Harrison, W. E. Smith, C. M. Haring, A. Mack Scott, E. H. Houchin, G. B. Collins, D. C. Lindley, A. S. Robertson.

WHERE WE STAND ON THE ACETONEMIA PROBLEM

By DONALD E. JASPER, D.V.M., Ph. D., Division of Veterinary Medicine
University of California, Davis, California

A résumé of a talk given before the Sacramento Valley Veterinary Medical Association, June 25, 1948.

The terms "acetonemia" and "ketosis" imply an accumulation of ketone bodies or acetone bodies in the blood stream. Aceto-acetic acid and B-hydroxybutyric acid, partial oxidation products of fatty acid metabolism, and acetone, derived from aceto-acetic acid by the loss of CO_2 , are the three constituents which pile up in the blood. It is unanimously agreed that the ketone bodies originate almost entirely within the liver, and that fat is the chief substrate from which they are formed.

Why then do they accumulate in large amounts? It has been noted that this occurs when the liver is depleted in glycogen. This indicated to some that glucose, glycogen, or some other form of carbohydrate was necessary for the complete oxidation of fat. The oft-repeated statement, "Fats burn only in the flame of carbohydrates," is a popular expression of this theory.

More recently it was suggested and proved beyond any doubt that the oxidation of fat varied inversely to the ability of carbohydrate sources to supply the energy demands. This led to the belief that carbohydrate prevented an accumulation of the ketone bodies in the blood, not by hastening their oxidation, but by decreasing their formation.

Actually it is now believed that both theories are right in part. No one will deny that carbohydrate is anti-ketogenic. But recent developments indicate that a certain amount of carbohydrate is necessary for the completion of normal fatty acid oxidation procedures¹.

Fat Metabolism

Fats are made up of glycerol and fatty acids. The glycerol fraction is readily converted to glycogen. Fatty acids are broken down at alternate carbon atoms to form two-carbon molecules or "acetates." If the "acetates" are not removed rather quickly from the blood stream by oxidation or reconversion, pairs of them combine to form the four-carbon ketone bodies.

Oddly enough, glucose may also be broken down into "acetate" molecules and the "acetate" from both carbohydrate and fat may form glycogen. Until recently we could study only changes in amount of a substance present. By use of isotopes and labeled atoms, we can now study the change or replacement of a substance independent of the total amount present. Using isotope technic it has been shown that "acetate" from fat can replace carbohydrate but cannot increase the

amount present in the organism because the process by which it is utilized requires the presence of carbohydrate itself². Therefore, fatty acids and their "acetates" do not increase glycogen stores. Much awaits further investigation and ketosis cannot be well understood until we know more about the intermediary metabolism of fats, carbohydrate, and possibly of protein as well.

Hypoglycemia

The normal blood sugar of cattle is between 40 and 60 mgm. per cent. During ketosis it is usually in the 20's or low 30's and quite often between 10 and 20 mgm. per cent. The relative importance of ketonemia and hypoglycemia in the production of clinical symptoms has not been established. Aceto-acetic acid and acetone have been found to be toxic to small experimental animals. B-hydroxybutyric acid can be utilized to some extent by the tissues. Some feel that toxic effects of these substances are partially responsible for clinical manifestations of ketosis. Others are of the opinion that hypoglycemia is of more importance. So far as we know, nerve cells can utilize only carbohydrate for energy purposes and when the source of carbohydrate is depleted, nervous symptoms occur. Depressed or deranged consciousness and incoordination or paralysis could be expected then as natural results of hypoglycemia.

In an effort to demonstrate the effects of prolonged hypoglycemia in cows, Jasper and Roepke³ maintained the blood sugar at very low levels for rather long periods, by using protamine insulin. By these experiments it was shown that cows are susceptible to hypoglycemia and will go into a hypoglycemic crisis after thirty-some hours of continuous hypoglycemia. However, it may take several hours of low blood sugar before symptoms occur. Moreover, it was demonstrated in one case that a very transitory rise in blood sugar may be sufficient to abate symptoms for a continued long period of hypoglycemia.

This is entirely different from what occurs in human beings and the usual laboratory animals. Ordinarily when the blood sugar drops below a certain critical level a hypoglycemic shock or crisis occurs immediately. There is no impressive time lag. But here it would seem that we must consider something new in neurometabolism. Apparently the bovine can store energy-producing sub-

¹ Bloch, Conrad, "Acetic Acid Metabolism", *Annual Review of Physiology* 1947, Annual Reviews Inc., Stanford, California.

² Jasper, Donald E. and Roepke, M. H., Unpublished Data.

stances in its nerve cells, or these cells can utilize for a time substances other than carbohydrate, such as B-hydroxybutyric acid. Possibly available carbohydrate can be concentrated from the blood. A similar delayed reaction to hypoglycemia has been demonstrated to occur in ewes at Davis.

Pathologic Changes

Several investigators^{3,4} have established a markedly fatty and friable liver, fatty changes in portions of the kidneys, and a fatty adrenal cortex as characteristic post mortem findings of pregnancy disease in sheep. The same changes, sometimes of equal severity were also found in apparently normal ewes before parturition. Similar changes have been demonstrated in cows dead from acetonemia^{5,6,7}.

Studies were recently made² to determine what happens in the liver of cows during pregnancy and early lactation. Livers from 4,621 cows in advanced pregnancy (estimated within 6 weeks of parturition) were examined grossly and of this number 44.6 per cent were fatty. In contrast only 0.52 per cent of livers from 4,951 cattle not in advanced pregnancy were classified as being fatty. Histologic examination of 377 representative specimens indicated that the gross classification was quite accurate in indicating the presence of fatty metamorphosis.

By means of liver biopsies several animals were followed through gestation and early lactation. A tendency for fat to occur in the livers of apparently normal cows prior to parturition was demonstrated and an even greater number had fat appear during the first three weeks of lactation. As expected, an inverse relationship existed between fat and glycogen in the liver.

These findings demonstrate a definite tendency toward ketosis in the cow during late gestation and early lactation. At best the liver can supply only enough glycogen to supply body needs for about six hours. If we have a liver depleted in glycogen and loaded with fat, the extra energy so often needed at this period of physiologic stress must then be supplied by the oxidation of fat. When this process is carried too far, ketosis develops.

Prevention

Clinical "pregnancy disease" can be produced experimentally in ewes by reducing the calorie intake during the latter part of gestation and at no other time^{8,9}. Considerable success has been achieved in the prevention of ketosis in ewes by insuring an adequate diet and an ample carbohydrate intake during the last half of pregnancy. Exercise also is important, possibly because it insures a good appetite.

Experimental production of the clinical disease in cattle is not so satisfactory. Meas-

ured by blood sugar and ketone levels, it is possible to produce ketosis in cattle during early lactation and to some extent prior to parturition^{10,11}. The ketosis thus produced does not appear to me to be completely identical to that which we see in the field in that the subject tends to recover too quickly following access to a normal ration. Likewise, no method of management has proved itself perfect for the prevention of the disease in cattle. Feeding of molasses or other readily available carbohydrate plus a well-balanced ration during late gestation and early lactation are certainly logical procedures but they do not always prevent the disease.

Green pasture is frequently the answer in problem herds and the incidence is generally less in pastured animals than in stable-fed animals. Yet many herds have a great deal of trouble even though they are on excellent pasture.

The narrow range of time during which changes associated with ketosis can be reproduced suggests a basic change in intermediary metabolism making the ewe or cow more susceptible to an inadequate carbohydrate intake. The fundamental reason behind all this eludes us for the time being.

Diagnosis

The nitroprusside test has become a popular and valuable aid in the diagnosis of ketosis. It should be remembered, however, that many apparently normal cows frequently give a positive nitroprusside test with undiluted urine. We must then be very careful not to make a diagnosis of ketosis on this basis alone. Milk fever, metritis, foreign body, peritonitis, mastitis, change of feed, and other conditions are common at this time and must not be over-looked. Glucose may of course be indicated as an adjunct to other treatments in such cases for fat is, of course, being catabolized at too fast a rate.

Two modifications of the nitroprusside test have been introduced which I feel are helpful in distinguishing between true, severe, or primary ketosis, and mild or secondary ketosis which frequently accompanies other

³ Roderick, L. M. and Harshfield, G. S., "Pregnancy Disease of Sheep". No. Dak. Agr. Exp. Sta. Tech. Bul. 261. 1932.

⁴ Groenwald, J. W., Graf, H., Bekker, P. M., Malan, J. R. and Clark, R., "Domsiekte or Pregnancy Disease in Sheep II". Onderst. J. of Vet. Sci. and An. Ind. 17:245-296. 1941.

⁵ Sjollema, B., "Nutritional and Metabolic Disorders in Cattle". Nutr. Abst. and Rev. 1:621-631. 1932.

⁶ McIntosh, R. A., "Acetonemia-Ketosis". Canad. J. Comp. Med. 8:227-232. 1944.

⁷ Sampson, Jesse, Morrill, C. C. and Alberta, J. O., "Ketoneuria in Fetuses of a Heifer and Ewe Affected with Severe Ketosis". Corn. Vet. 35:365-369. 1945.

⁸ Roderick, L. M., Harshfield, G. S., and Hawn, M. C., "The Pathogenesis of Ketosis". J. Amer. Vet. Med. Assoc. 90:41-50. 1937.

⁹ Forbes, Richard M., "Ketosis in Ruminants". Corn. Vet. 33:27-47. 1943.

¹⁰ Shaw, J. C., "What Do We Know About Ketosis?" Holstein-Friesian World. 43:24-25. 1946.

conditions. Sjollem⁸ and Roepke¹¹ suggested that the urine be diluted 1-10 with water before making the test. Paterson¹² applied the test to milk. It was his observation, confirmed by us² that a mildly positive test on milk has more significance than a strong test on undiluted urine because the milk levels parallel the blood levels rather closely, whereas the urine levels do not. Both of these procedures appear to have merit and I would like to see them given extensive trial in the field. By using two grams of two per cent nitro-prusside compound instead of the usual one gram of one per cent, a little better sensitivity is obtained with the milk test.

Treatment

As Sampson and Boley¹³ point out, glucose intravenously and subcutaneously supplemented by sugar or molasses orally is the most logical form of therapy and the only one which has proved highly satisfactory. Chloral hydrate may be helpful in cases showing excitement but is contraindicated if depression is present.

Vitamins appear to be of value only if specific deficiency exists.

Henderson¹⁴ recently reported encouraging results following oral cobalt administration and Gingras¹⁵ obtained good results when cobalt was added to dextrose for intravenous use. A number of cobalt-containing products for both oral and parenteral use are now available. The value of cobalt and the optimum route of administration, in so far as ketosis is concerned, remains to be proved by widespread clinical use and careful research projects.

¹¹Roepke, M. H., "Physiologic and Metabolic Aspects of Acetonemia in Cattle". *J. Amer. Vet. Med. Assoc.* 100:411-414. 1942.

¹²Paterson, A. B., "The Diagnostic Value of Rothera's Test on Milk". *Vet. J.* 101:199-204. 1945.

¹³Sampson, Jesse and Boley, L. E., "The Physiologic Basis of Therapy for Ketosis in the Ruminant". *Amer. J. Vet. Res.* 2:327-332. 1941.

¹⁴Henderson, J. A., "Ketosis in Dairy Cows". *Cornell Vet.* 37:292-304. 1947.

¹⁵Gingras, G. E., "Cobalt Deficiency and Ketosis". *Haver-Glover Messenger.* 27:8-9. 1947.

CCA Convention Dates

The California Cattlemen's Association Annual Convention will be held at San Jose on December 2, 3 and 4 rather than on the originally announced dates of December 9, 10 and 11. The change was necessitated by a conflict with dates chosen by the Western Fairs Association, which is also meeting in San Jose. Information on dates for the Western Fairs' meeting which was previously arranged was not available to Board of Directors when the first dates were set for the Annual Convention. Board will meet on December 2 and general sessions will take place on December 3 and 4.

IN MEMORIAM

Rowena Wyatt Outhier, wife of Dr. C. B. Outhier of Salinas, passed away July 25th. Mrs. Outhier had resided in Salinas for the past 42 years, coming as a bride two years after Dr. Outhier had started his practice there.

Mrs. Outhier devoted a great deal of time to groups promoting civic welfare in Salinas.

At the California State Veterinary Medical Association Conventions, Mrs. Outhier was always present, taking an interested part in the Women's Auxiliary.

* * *

Dr. W. F. Betzold of Sanger, California, passed away March 17, 1948, at the age of 68. He leaves a widow, Mrs. W. F. Betzold, long time resident of Sanger. Dr. Betzold graduated from Chicago Veterinary College in 1905. He practiced for forty-two years in Sanger, California, and was a veteran of the Spanish American War.

* * *

Dr. George S. Glover, 61, passed away September 29 at his ranch in Southern California. Services were conducted in the Little Church of the Flowers with Forest Lawn in charge. He was born in England and first came to this country 42 years ago, and established the Glover Veterinary Service in 1923.

Thirty-seven Pass Examination

The following doctors passed the recent California State examination in veterinary medicine.

Ainley, Richard Gray, Woodlake; Anderson, Walter Harold, Long Beach; Barta, Fred, Modesto; Benjamin, Maxine, Los Angeles; Bullock, Alden, Avenal; Burdett, Ramsey, Hollywood; Burns, Robert, Rockford, Michigan; Campbell, Lewis, Centerville; Cittadino, J. F., Los Angeles; Custer, Millwood, Santa Ana; Fisher, V. H., Lewiston, Montana; Frey, William, Tucson, Arizona; Goldberg, Sidney, San Francisco; Greene, William, San Ysidro; Hardin, Clarence, Petaluma; Hicks, Joseph, Santa Cruz; Hill, Harold, Fort Collins, Colorado; Hinshaw, Elbert, Boulder, Colorado; Immenschuh, Jean, San Diego; Jackson, Gilbert, Altadena; Jamison, William, Los Angeles; Menter, John Gerald, Los Banos; Meyer, Joshua, St. Helens, Oregon; Moye, Jack, Salem, Oregon; Page, Harry, Pasadena; Paulson, Vernon, Corte Madera; Reed, Theodore, Salem, Oregon; Richelieu, Fred, Watsonville; Ross, Alan, Oakland; Sher, Herman, Pittsburgh, Pa.; Tangeman, Richard, San Dimas; Vandeven, John, Stockton; Von Kaenel, Fred, San Diego; Winn, John, Altadena; Wodars, Velma, Santa Barbara; Yeager, George, Van Nuys; Zaprauskis, Janis, Santa Monica.

CATS ARE SATISFACTORY PATIENTS

General Anesthesia of the Cat

By EUGENE C. JONES, D.V.M., and MISS JERRY GRIMM

Before the addition of the barbiturates to our available anesthetics in cats, ether or ACE (alcohol, chloroform, and ether) were used almost exclusively as a general anesthetic and with varied results depending upon the practitioner's care and knowledge of the administration. Pentobarbital sodium and Pentothal sodium are now used with very gratifying results, the mortality being less than one per cent.

In giving a general anesthetic, there are several vital precautions that seem necessary in successful anesthesia.

1. Be sure that the cat has fasted for at least twelve hours.

2. Allow the patient to relax for a few hours, sometimes overnight in the hospital before administration.

3. Do not attempt to anesthetize a cat which has been struggling violently and is partially exhausted.

4. Use ether and a good anesthetist in senile, emaciated, and weak cats.

5. Keep patient warm and under close observation until it shows positive symptoms of recovering from the anesthetic.

In the past, it was the policy to either tie a cat to a table, roll it in a rug or towels and apply a sponge or a piece of cotton saturated with ether to the nose. Holding the patient to the best of our ability until the struggle ceased. In some cases, much to our regret, we would find that it would struggle no more in this world.

A box two feet long, one foot wide, and one foot deep, with a hinged top in which a glass window four inches by eight inches is constructed, has been most satisfactory in administering ether. The box is made practically airtight and the lid is held closed by a hook and eye. Before placing the cat in the box, a piece of cotton well saturated with ether is introduced in the box for at least ten minutes, the lid being kept closed until the cat is admitted. If necessary, carry the box into the ward and gently place the cat in the box and close the lid. The cat will usually start an excessive secretion of saliva, raise its head, and probably move around a bit. In a few minutes, the nose will remain on the floor and on moving the box, there is no active motion of the cat. Immediately remove the patient to the operating table allowing it to have a few inspirations of air, and proceed to use a cone or an ether bag to continue the anesthetic.

In using ether we do not crowd the anesthetic, and we watch for weak or shallow

respirations and cyanotic ears as danger signals. It is better to allow the cat to regain partial consciousness during the operation than not at all.

Operations which require anesthesia for as long as ten minutes, pentobarbital sodium is the anesthetic most preferable in nearly all cases. It is best given intravenously into the radial vein very slowly. Our procedure is to place the cat on a table in a room as free from noises as possible. An attendant scratches its ears, and quickly with sharp electric clippers or, if the cat is too nervous, with scissors, clip off the hair on the anterior and proximal area of the radius. The attendant applies pressure on the vein with the thumb, and the area is cleansed with alcohol. A 2cc syringe is filled, and a 22 gauge needle is attached. The needle is inserted into the vein, and the pentobarbital is given approximately one quarter of a cc rapidly, and then continued until by pinching the toes of the posterior limbs there is no response.

Pentothal sodium is useful in castration, tooth extractions, debridement of wounds, and any operations of short duration. The advantage of pentothal sodium is that the patient recovers consciousness in a much shorter time than with pentobarbital sodium and the threshold of safety is wider.

In giving pentothal sodium, our procedure is the same as with pentobarbital sodium except that we allow the needle to remain in the vein and the pentothal is given slowly when necessary to keep the cat anesthetized. It does not seem necessary to weigh a cat when giving anesthetics intravenously, but it must be administered slowly and the patient's reactions must be watched. Some require a smaller amount than commonly prescribed.

If desirable to give pentobarbital sodium intraperitoneally, the cat must be weighed and it is safer to give a little less than the prescribed amount per pound of body weight. If necessary, a few inhalations of ether to a practically anesthetized cat, will produce the desired results.

The threshold between complete anesthesia and death is not too wide, and it is better to give too little rather than too much. Respiratory stimulants such as metrazol, amfetazol, ect., are effective in some cases, but they are far from being a panacea. As long as the heart is functioning, continue artificial respiration and stimulants.

It will save a lot of embarrassment if a little care and thought are used in administering anesthetics.

Report of Delegate, House of Representatives, AVMA Convention

SAN FRANCISCO, CALIF., AUGUST 16-19, 1948

Due to the fact that Dr. J. M. Arburua, California delegate to the House of Representatives of the American Veterinary Medical Association, was also General Chairman of the Committee on Local Arrangements for the Eighty-fifth Convention of the American Veterinary Medical Association, and he was busy discharging the duties of that committee, it befell my lot as alternate delegate to represent the California State Veterinary Medical Association at the meetings of the House of Representatives in San Francisco, on August 16 and 17, 1948.

In order that the California State Veterinary Medical Association be officially represented, a meeting of the Executive Board was held at the Palace Hotel on Sunday evening, August 15, 1948, to give the delegate instructions on the proposals to be considered. The proposed changes were discussed freely and the delegate was instructed to vote favorably on proposals numbers 1, 2 and 4, and to disapprove the other four propositions.

The proposed changes in order listed are as follows (for details see July, 1948, AVMA Journal, page 90):

1. Makes membership in the AVMA contingent upon membership in the constituent state or provincial association, and applies to future new members only.
2. Increases AVMA dues to \$10.00 per year, and prorates dues for each month of the year, plus \$5.00 initiation fee.
3. Increases tenure of delegates to the House of Representatives from two-year term to four-year term, and provides for the AVMA to pay one-half of the travel expense of the delegate to the AVMA meeting.
4. Provides for the president-elect to preside at meetings of the House of Representatives, and therefore relieves the president of this duty.
5. Amends the Code of Ethics, paragraph 7, and sets forth unethical features of members lending approval to unqualified persons or groups in connection with the veterinary profession.
6. Condemns the diagnosing or handling of animal diseases by pharmacists, unless also qualified as a veterinarian.
7. Changes the name of the Section on Sanitary Science and Food Hygiene to the designation "Public Health," it being the feeling of the present chairman of that section that the old name was not sufficiently inclusive.

The first meeting of the House of Representatives was held Monday morning, August 16, and after the usual opening remarks by the chairman, Dr. W. A. Hagan, president

of the AVMA and the reading of the minutes of the meeting held in Cincinnati last year, the seven proposed changes above listed were read, discussed and acted upon. All changes were approved by the House of Representatives, having been acted upon previously by the Executive Board.

Detroit, Michigan, has been selected as the meeting place for the 1949 Convention, during the month of July.

Invitations for the 1950 meeting were received from Miami Beach, Florida, and also from Miami, Florida, two cities only a few miles apart, but with a keen rivalry of appeal to attract the convention. Texas presented a very broad invitation, asking that the 1950 convention be held somewhere in Texas, and with particular emphasis upon Houston, San Antonio, and Dallas. These cities will be surveyed by some member of the AVMA Chicago office with respect to their hotel accommodations, meeting rooms, banquet facilities, etc., and the decision announced at a later date.

Reports of Special and Standing Committees were presented and in most cases accepted as printed. Reports of Executive Secretary, Treasurer, and Editors were read and adopted.

Respectfully submitted,

E. F. SHEFFIELD, *Alternate Delegate.*

Applications for Membership

Crump, John A., Glendale—Vouchers: James Brown, Robert Beasley.

Elson, B. E., Los Angeles—Vouchers: Richard Mott, F. P. Wilcox.

Hanson, Morris, Davis—Vouchers: Hugh Cameron, W. R. Hinshaw.

Hauge, Ronald T., Sacramento—Vouchers: C. M. Sepponen, Philip A. Lee.

Micuda, J., Phoenix, Arizona—Vouchers: Charles Reid, G. W. Closson.

Sucher, Harry, Sacramento—Vouchers: S. T. Michael, C. M. Sepponen.

Brown, C. E., Venice—Vouchers: William Stansbury, J. L. Sullivan.

Albert Chafets, San Francisco—Vouchers: Louis Johnson, Wendell Johnson.

Norman T. Freid, San Francisco—Vouchers: Louis Johnson, Wendell Johnson.

Kenneth Devine, San Jose—Vouchers: Rex Taylor, G. E. Martin.

**Over \$4,000.00 has been paid in claims
to members holding group health and
accident insurance.**

Equine Practice on Breeding Farms. II. Disease Control*

By B. J. ERRINGTON, D.V.M., Arcadia, Calif.

Most of the mares that develop uterine infection on farms with veterinary supervision do so as a result of retained placenta, dystocia, or wind-sucking through the vagina. The veterinarian is usually able to treat them as acute infections.

Of the newer drugs, tyrothricin and the sulfas seem to have given the best results when used locally. My experience with the local use of penicillin in metritis has not been encouraging.

Metritis

Douching mares for acute metritis usually prolongs the infection and may lead to chronicity. Most cases of chronic metritis in mares are very difficult to cure. Frequently they appear to have recovered, and cultures may be negative, but the infection flares up if they are bred a few times without conceiving. Just the process of going through several heat periods and being bred seems to bring on a recurrence. It is advisable to wait until late in the breeding season before breeding such mares with a hope of getting them in foal on one or two covers.

Wind-Sucking

A considerable number of mares have atrophic muscles of the vulva from congenital causes or from age and previous parturitions. The vulva is relaxed and allows air to be drawn into the vagina. The air and foreign material that thus gain entrance lead to irritation and eventually to infection.

Suturing of the upper part of the vulva of these "wind-sucking" mares (Caslick operation) has been one of the most successful operations developed in recent years. It has been so successful that there is now a tendency to do it when not indicated.

Diagnosis of wind-sucking can be made by the noise they make when they move, or by examination and palpation of the vulva lips. Examination of the vagina will show evidence of an irritation or infection if they have been affected for any length of time.

Vulvas should not be sutured unless it is definitely indicated, as a reinforcing suture is usually needed at the time of breeding to prevent tearing, and stitches must be cut out before foaling and replaced afterwards. Owners sometimes neglect to carry out either of these procedures, with the result that the vulva tears in a manner difficult to correct.

If a mare develops wind-sucking during the breeding season it is usual to suture immediately after a cover. There will be healing in time for rebreeding if conception does not occur at that service.

*This is the second of a series by Dr. Errington. The third article will appear in a subsequent issue.

Frequently mares suck wind only when the vulva is relaxed during estrus. Enough irritation or infection may develop during that time to cause difficulty in getting them in foal, or to cause prolonged symptoms of estrus. These mares can often be treated satisfactorily by temporarily closing the upper part of the vulva with metal clamps until they go out of heat. The clamps can then be removed. However, if a mare does suck wind constantly there is no substitute for suturing.

Virus Abortion

Virus abortion has been diagnosed on several farms in California during 1947. This disease was definitely diagnosed in Kentucky only in recent years but had probably been present there for many years (W. W. Dimock and P. R. Edwards, *Cornell Veterinarian* 26, 1936).

The disease is very contagious to other pregnant mares at the time of abortion, although by strict isolation it has usually been confined to those mares that were in direct contact with the positive mare at the time of abortion.

Little is known of how the disease is carried over from year to year. On one farm here this year the disease first appeared in two mares that had recently been shipped from Kentucky. They aborted on succeeding days. In other instances none of the mares could be shown to have had contact with the disease the previous year. It does not seem to carry over on a farm from one year to another.

Diagnosis

Abortions from this disease usually occur after the eighth month of gestation, and it has been diagnosed in foals that died after they were a few days old.

Gross lesions found in the fetus consist of an icteric discoloration of the foot pads and the tissue within the abdominal cavity; an increased amount of fluid in the thoracic cavity; small white degenerated areas in the liver; congested mesenteric lymph glands; and hemorrhages, usually petechial, on the surface of the heart and lungs.

Further evidence indicating virus abortion would be negative cultures made from the fetus and negative complement fixation test of the blood of the mare for *Salmonella abortus-equina*. Definite diagnoses can be made by finding intranuclear inclusion bodies in sections from the liver and lungs.

Control

Blood serum, plasma, and whole blood from mares that have aborted from the disease

(Continued on Page 31)

HIGHLIGHTS FROM DR. W. A. HAGAN'S ADDRESS

Eighty-fifth Annual Meeting of the American Veterinary Medical Association Held in San Francisco, California, August 16-19, 1948.

Dr. W. A. Hagan's comprehensive address touched on the important inventions which have been made during his life and pointed out that the twentieth century has seen more technical progress than the thousand years preceding it, save possibly for the first decade of the nineteenth century when steam power ushered in the industrial age. This rapid progress has naturally brought about a need for modernizing continually the educational programs for veterinarians. It has increased the need for experienced, well-educated teachers to bring home to students the latest in modern experience. Dr. Hagan deplored the fact that many of the new veterinary schools have found it necessary to place young inexperienced men in important teaching positions because they have not been able to find qualified men for their faculties. This has come about through the rapid increase in the number of schools and the lack of sufficient qualified personnel to man them. The increase in the number of schools is a normal and healthy development, but unfortunately the increase has occurred too rapidly for the profession to be able to supply the proper personnel to man them. During the last three years, five additional schools have been formed and two more will begin operating this fall. Dr. Hagan stated, "In my opinion, they are not acting in the best interests of their state or the country in urging the formation of schools that cannot be adequately staffed under present conditions." He was referring to the activities in additional states for the formation of even more schools than we have at the present time. A notable piece of advice is given the student, "A veterinary education is not a liberal one; it is a narrow specialized one. If veterinarians are to hold their own with other educated people, they need to know something of history, economics, government, psychology, and other subjects included among the humanities. Prospective veterinary students should not be advised to load their pre-veterinary years with sciences only, as many have a tendency to do under the mistaken idea that this is best since by so doing they can demonstrate to admitting authorities their ability to do well in scientific studies. Such students sacrifice their only chance for broadening their educational base."

Dr. Hagan went on to take up the problem of better clinical teaching and internship for veterinary students. More clinical work in college with an emphasis on a greater amount of experience with diagnosis and care under

85TH ANNUAL MEETING OF THE AUGUST 16-1



Dr. A. F. Schalk, College of Veterinary Medicine, Ohio State University, presenting the Borden Foundation Award for "Outstanding Achievement" from Mr. W. A. Wentworth of the Borden Foundation for "Outstanding Achievement."



Dr. W. R. Krill, chairman Executive Board, presenting the Borden Foundation Award for "Outstanding Achievement" from Mr. W. A. Wentworth of the Borden Foundation for "Outstanding Achievement."

THE AVMA, SAN FRANCISCO

16-19, 1948



University, receives the 1948 Borden Award Medal and \$1,000 prize for outstanding research contributing to the control of dairy cattle diseases."



presenting Gold Key to Dr. Hurt, incoming president.

THE CALIFORNIA VETERINARIAN

competent guidance was stressed. The problem of internship for the veterinary student is one entirely different from that of internship for the medical student. Whereas the medical student may turn to enormous well-staffed hospitals, the veterinary student may only turn to very small, usually one-man hospitals. In Dr. Hagan's opinion internship should not be required of a veterinary student, but some system might be developed whereby the license for independent practice would be withheld until the candidate shows a year's practical experience with a licensed practitioner.

Dr. Hagan also touched on competition from unqualified men with this fine point, "The practitioner who uses intelligently the education that he was given usually doesn't worry much about competition from untrained persons."

A National Board of Veterinary Examiners suggested by the House of Representatives would prepare a comprehensive, rigid, and fair examination, which, if the individual states would gradually accept in lieu of separate state examinations, would save veterinarians unnecessary trouble if moved from one state to another.

The AVMA Public Relations Program was discussed and its problems and solutions brought to light.

The need for another full-time staff member for AVMS headquarters was made clear.

The tentative plans for Selective Service's attitude toward veterinarians was given . . . "members of the veterinary profession, veterinary students, and pre-veterinary students" are to be handled "in the same way as the comparable groups in medicine."

The need for an increase in civil service salaries for veterinarians was brought out.

The excellent concluding topic of Dr. Hagan's address concerned a need for research for pet animals, and pointed out that the taxpayers and pet owners themselves must solicit funds for this type of study.

CONVENTION HIGHLIGHTS

In many respects the last convention of the AVMA was one of the most successful ever held. It was the second largest in attendance, with two thousand registrants. The attendance at the general section meeting was equal to any of the past meetings, and the high caliber of the papers presented were on a par with all previous conventions.

The fraternity gathering and dinner surprised everyone with its large audience and excellent dinner.

The Women's Auxiliary surpassed anything heretofore offered by this group. In addition to their breakfast and sight-seeing trips, the open house maintained in their suite of rooms at the Palace Hotel was the talk of the convention.

The splendid weather that prevailed in San Francisco during the meeting days added greatly to the comfort and enjoyment of all those attending.

HISTORICAL REVIEW OF THE CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION

By JOSEPH ARBURUA, D.V.M.

(Continued from Last Issue)

The lofty ideals and mutual moral obligations that the fathers of our profession held in the formative days of organized veterinary medicine, in this State, are clearly brought out in the code of ethics the newly organized California Veterinary Medical Association adopted in its second regular meeting in June 1888.

This code is here reproduced verbatim, not primarily for its interest value, but rather to preserve it as a matter of record.

Code of Ethics

Section I. No member shall assume a title to which he has not a past claim.

Section II. When a member is called to treat a case having been treated by a fellow graduate of veterinary medicine and surgery, or member of this society, he shall as soon as possible put himself in communication with attending practitioner, and shall not further visit unless he is willing to relinquish the case, but shall treat when called to any urgent case on behalf of the attending practitioner until such time as he can be seen or heard from.

Section III. In case of consultation, the consulting veterinarian shall so far as he conscientiously can sustain the surgeon in charge of the case, and in no way either by word or action promote his own interests at the expense of his brother practitioner.

Section IV. While it is essential for the veterinarian consulted to ascertain the true nature of the case, he should carefully withhold all discussion of the subject till his brother practitioner and himself meet in private for deliberation.

Section V. When a consultation is arrived at, it shall be the duty of the attending veterinarian to state the results to his client in the presence of the consulting veterinarian, and no opinion shall be delivered which is not the result of previous deliberation and concurrence.

Section VI. When diversity of opinion exists, it may be proper to refer the case to several veterinarians in good standing, or a court medical, but in most cases, mutual concession should render this unnecessary.

Section VII. It shall be deemed a breach of the Code for a consulting veterinarian to re-visit a patient without special invitation or agreement.

Section VIII. Any member who shall advertise or otherwise offer to the public any medicines, the composition of which he refuses to disclose, or if he proposes to cure

disease by any such secret medium, he shall be denounced as an unworthy member of this society, and be expelled therefrom.

No recorded evidence of the third regular meeting of the Association, which was held in September 1888 has come to light.

The first annual meeting was held in the editorial room of Breeder and Sportsman, in San Francisco, December 13, 1888. A new set of officers were chosen in the persons of Thomas Maclay, President, W. C. D. Morrison, Vice-president, A. M. McCollum, Secretary, and W. H. Woodruff, Treasurer. The first three were twice reelected to their respective offices, thus serving the Association for three years. In 1891 Maclay declined reelection as president.

The first move toward enacting legislation regulating the practice of veterinary medicine in California was started at this meeting. A committee composed of Drs. Bowhill, McCollum and Klensch was appointed to prepare a bill to be presented to the State Legislature. Thus started the long hard uphill drive for official recognition, but it was no easy task and several years were to pass before a practice act was enacted.

The meeting was attended by eleven members, and four new applicants were admitted. The members in attendance were Drs. Bowhill, Maclay, McCollum, Orvis, Masoero, Spencer, Nief, Woodruff, Klensch, Parent and Morrison. Cesare Masoero and W. H. Woodruff, both of San Francisco, must have been elected to membership during the previous September meeting since their names do not appear in accounts of the earlier meetings.

The veterinarians admitted to membership were F. Cowper and I. Oliver of Los Angeles, William Rowland of Pasadena and William F. Egan of San Francisco. There being no record of the previous September meeting it is not known just how many members had been admitted at that time, but we are certain that with those newly admitted there were at least seventeen members in the Association at the beginning of the second year.

It is noted that among others Dr. William F. Egan became a member December 13, 1888. Having been graduated from the Royal College of Veterinary Surgeons of London in the early part of the same year he came to San Francisco and started practice. He lost no time in identifying himself with organized veterinary medicine. He maintained his membership in the association until his death in 1946, a period of fifty-eight years. In 1938 the Association honored him by presenting him a scroll commemorating half a century of continuous uninterrupted membership. To

the present writing no other man has attained such a distinction.

He was a dignified and intelligent individual and every inch a gentleman. Everyone, client and colleague alike, respected his professional ability and moral character.

In 1894, the University of California established the first school of veterinary medicine west of the Rocky Mountains. It was mainly through Dr. Egan's efforts that this was done and he was appointed the dean and was the principal teacher. The school unfortunately closed in 1900 due to lack of students and funds. He, however, successfully continued his large animal practice until his retirement in the early thirties.

Another Thank You to One and All

From Mrs. CHAUNCEY B. MILLER

The oft quoted "San Francisco—The City That Knows How" in modesty and deep appreciation for the wonderful hospitality shown by all our Californians during the recent American Veterinary Medical Association Convention, may well adopt "California—The Know How State." It was gratifying to have all our ladies enter into the spirit of one big happy family and to convey that attitude to our guests, and from the acclamation of our visitors, that bond of friendliness was united.

A mere "Thank You" does not adequately express my sincere gratitude to you California hostesses for the time, enthusiasm, and cooperation which you rendered, but perhaps it would be flattering to know of the many comments and letters of appreciation that are arriving with each mail. It is not infrequently quoted that our convention has far exceeded any that the veteran convention goers can recall. The out-going President of the Auxiliary remarked in her letter: "As far as the Auxiliary meeting itself was concerned, it surpassed in interest any previous meeting." The attendance was double that of our original expectations, but even with this added number we are convinced that through the unselfish and untiring efforts of the California Women's Auxiliary, all were sumptuously entertained.

The hospitality rooms, which were an innovation at this convention, were a great success, and this was entirely due to the beautiful flowers and array of food provided and displayed in such tempting fashion that the endeavor of all who participated manifested itself throughout every hospitality room. We of California have come to accept our florals almost as commonplace, but it would not be hard to tell a visitor from the East by the "Oh's" and "Ah's" so often heard.

All of the entertainment planned—the tours, dinner, young folk's mixer, fashion show and breakfast, along with our meetings,

"Pazillin" Released Nationally

National release of "Pazillin," a new and more convenient dosage form of penicillin which permits treatment of patients for four days (96 hours) with a single injection, was announced by Sharp & Dohme, Inc., prominent Philadelphia drug firm.

The result of extensive research and clinical investigation by scientists at the Sharp & Dohme Medical Research Laboratories, "Pazillin" doubles the duration of action for a single injection of penicillin which was previously attainable with plain procaine penicillin in oil. The size of the injection dosage of the new material is 300,000 units, same as other types of parenteral penicillin.

In clinical studies, 90 per cent of more than 100 patients to whom one injection (300,000 units) of "Pazillin" was administered showed therapeutic blood levels for 96 hours or more.

Addition of aluminum stearate, a water repellent compound, is responsible for "Pazillin's" prolonged therapeutic effectiveness. By jelling the oil in which the penicillin is suspended, this compound slows the rate at which the penicillin enters the blood stream from the muscle of the patient.

For doctors an important advantage of aluminum stearate as a suspending agent with oil is its thixotropic property, which permits a uniform suspension with only two or three seconds of rapid shaking. Previous types of penicillin, including procaine penicillin G suspended in oil alone, require vigorous and prolonged shaking for resuspension.

In addition to longer activity, less frequent dosage and greater ease of handling, there is no clinical evidence that "Pazillin" causes discomfort or subsequent irritation at the injection site. This was a particularly objectionable feature of penicillin in oil and wax preparation.

"Pazillin" Procaine Penicillin G Crystalline in Peanut Oil and Aluminum Stearate is indicated in the treatment of all infections in which penicillin is used and particularly in those infections requiring prolonged penicillin blood levels. It is administered by the intramuscular route only, is stable and may be stored at room temperature for one year without appreciable loss of potency.

This product is a sterile, free-flowing, uniform liquid prepared from nonpyrogenic crystalline procaine penicillin G monohydrate. Each cc. contains 300,000 units suspended in peanut oil with aluminum stearate. Each 300,000 units contain the equivalent of 120 mg. of procaine base.

"Pazillin" is supplied in 1-cc. B-D disposable cartridge syringes and in 10-cc. multiple-dose vials.

were attended with animation. We feel that the success of the convention more than repays us for the exertion put forth.

LIVESTOCK DISEASES REPORTED

Division of Animal Industry, State Department of Agriculture, Sacramento, California

DR. A. K. CARR, Administrator

Livestock diseases reported to State Division of Animal Industry during May to August inclusive, 1948. Also a summary of reports for the previous eight months.

	May-Aug. Incl. 1948			Previous 8 Months Sept. 1947—Apr. 1948 Incl.			Total 12 Months
	North	Central	South	North	Central	South	
Actinomycosis	..	4	..	3	2	1	10
Anaplasmosis	22	6	2	28	6	8	72
Anthrax, Cattle	3	4	1	10	7	..	25
Hogs	..	..	..	..	2	..	2
Sheep	..	..	..	..	5	..	5
Horses	1	..	..	1	..	..	2
Balano Posthitis, Sheep	..	..	..	3	4	1	8
Bovine Bac. Hemoglobinuria	1	..	..	3	2	..	6
Bovine Trichomoniasis	..	1	1	..	..	..	2
Caseous lymphadenitis, Sheep	..	..	..	1	..	..	1
Coccidioid granuloma	..	7	..	..	16	..	23
Coccidiosis, Cattle	1	..	..	3	1	..	5
Sheep	1	..	..	..	..	..	1
Contagious ecthyma, Sheep	..	..	..	3	..	..	3
Cysticercus bovis	..	1	..	..	1	..	2
Equine encephalomyelitis	22	12	18	15	18	19	104
Erysipelas, Cattle	..	1	..	..	..	..	1
Foot rot, Cattle	3	4	..	..	4	..	11
Sheep	8	..	..	2	2	..	12
Hog Cholera	4	10	..	19	3	4	40
Infectious keratitis, Sheep	1	..	..	1	1	..	3
Johne's disease	..	..	..	4	..	..	4
Malignant edema, Cattle	1	..	..	1	..	..	2
Mycotic Stomatitis, Cattle	1	1	..	..	..	..	2
Paratyphoid Infection, Cattle	1	1	..	..	..	..	2
Sheep	2	2	..	2	1	..	7
Swine	1	..	..	1	..	..	2
Sarcoptic Scab, Cattle	..	..	..	..	1	1	2
Screw Worm Infestation	..	..	..	10	..	..	10
Swine erysipelas	..	..	..	..	..	1	1
Texas fever ticks	..	..	1	..	..	..	1
Vesicular exanthema, Swine	..	3	..	5	46	1	55

Interpretation of the Hotis Test and Its Correlation With the Microscopic Examination of the Sample

By O. W. SCHALM* and KENNETH G. McKAY**

(Continued from Previous Issue)

Hotis I.

No detectable change in appearance of the sample during 15 to 20 hours incubation at 98 degrees F, or the changes which occur are limited to the formation of a grayish sediment or a gray adherent streak on the sidewall. These changes are indicative of a slight contamination of the sample with bacilli which is not serious enough to interfere with an interpretation of the test.

Microscopic examination: The majority of Hotis I samples will be free of streptococci or staphylococci. However, either of these organisms may at times be found in the smear. In the case of the streptococci, the majority will be contaminants or accidental udder invaders coming from the environment and commonly are not found on subsequent test. However, infrequently such samples represent very mild or early infections with *Streptococcus agalactiae*. Therefore, Hotis I samples containing streptococci should be regarded as *mastitis suspect* and the animal subjected to further test. Hotis I samples containing staphylococci may be regarded as *mastitis negative* unless associated with an abnormal leucocyte count. In the latter case they should be classified as positive for pathogenic staphylococci. Hotis I samples free of demonstrable bacteria, but containing a high leucocyte count not associated with the drying off period, should be regarded as *mastitis suspect* and the cow subjected to further test.

Hotis II.

The following changes may occur singly or in combination:

1. Yellowish, greenish, or whey-like ring below cream layer.
2. Yellow fluid or sediment at the bottom which disappears upon gently inverting the vial several times.
3. Yellow or green sediment adhering in the angle formed by the juncture of the bottom and sidewall of the vial.
4. Greenish-yellow or brownish-yellow adherent sediment usually covering the bottom of the vial.

Microscopic examination: The true significance of the changes listed under Hotis II can only be ascertained by microscopic study of stained smears. When streptococci are found the majority will not be *Streptococcus agalactiae*. Occasionally, early or mild cases of



Kenneth G. McKay



O. W. Schalm

Streptococcus agalactiae infections produce only a Hotis II type of reaction. Therefore, samples classified as Hotis II, and containing streptococci, should be classified as *mastitis suspect*. Hotis II samples, showing staphylococci, should be called positive for staphylococci if a concomitant increase in leucocytes is observed.

Hotis II+

Experience has shown that pathogenic staphylococci may produce a variety of changes in the Hotis sample, some of which are listed under the Hotis II classification; but since similar changes may also be induced by other types of bacteria, the changes listed as Hotis II cannot be taken as presumptive evidence of staphylococci. However, there are certain other alterations which occur in the Hotis sample which are strongly presumptive or indicative of the presence of pathogenic staphylococci. These have been segregated into the Hotis II+ classification and are as follows:

1. Green or brown colonies with white centers adhering to the bottom and/or sides of the vial.
2. Brown or green sediments with many pinpoint white colony centers adhering to the bottom of the vial and frequently extending a variable distance up the sidewall.
3. Sample partially digested resulting in a separation into whey-like fluid and solid material, the latter of which has a tendency to form a cylindrical, plug-

* Professor of Veterinary Science.

** Extension Specialist in Veterinary Science.

like brownish mass. When the sample is viewed from the bottom, a reddish-brown central mass is observed which often is surrounded by a ring or crescent of clear fluid (whey).

Microscopic examination of Hotis II+ samples usually without fail reveals the presence of staphylococci. However, the number may vary from a few clumps which are difficult to find to exceedingly numerous clumps of organisms. The leucocyte picture varies similarly.

Hotis III.

Yellow adherent sediment on the bottom, a portion of which may wash away on inverting the vial but the major portion remains. The Hotis III reaction differs from the Hotis IV reaction in that there are no yellow colonies on the sidewall of the vial. The Hotis III reaction is frequently produced by streptococci and as high as 50 per cent or more of such samples have been shown to contain *Streptococcus agalactiae*.

Microscopic examination: Hotis III samples containing streptococci are to be classified as *mastitis positive*. Hotis III samples containing staphylococci are classified as positive for staphylococci.

Hotis III +

Small, yellow, discrete colonies adhering to the bottom of the vial. These changes are typical of early or mild infections with *Streptococcus agalactiae*. (Occasionally samples are observed with distinct yellow colonies on the bottom which wash off, or one or more yellow colonies adhere in the angle formed by juncture of the bottom and sidewall. Such samples are to be classified as Hotis II.)

Microscopic examination: Hotis III+ reactions actually due to *Streptococcus agalactiae* may show only widely scattered organisms because of the scarcity of streptococci. In rare instance staphylococci are found as the only organisms in Hotis III+ reactions. Hotis III+ reactions containing streptococci are to be classified as *mastitis positive*.

Hotis IV.

This is the typical reaction produced by *Streptococcus agalactiae* in milk from well established infections. Yellow adherent colonies on the sidewall associated with either a yellow adherent sediment or colonies on the bottom of the vial. The number of yellow colonies may vary from one to many. The color of the column of milk may range from bluish-gray to yellow depending on the degree of acid production. Occasionally the yellow colonies on the sidewall are large and wash off easily. Ninety-six per cent of milk samples classified as Hotis IV have been found to contain *Streptococcus agalactiae*. The Hotis IV reaction is classified as *mastitis positive*.

Microscopic examination: This is not necessary in the case of Hotis IV reactions for nearly all will contain readily demonstrable streptococci. Infrequently a typical Hotis IV sample will fail to reveal streptococci in smears made in the routine way. To demonstrate the organism in such samples, decant the fluid and prepare the smear from the material adhering to the bottom or sidewall. Leucocytes will be found to vary from a few to innumerable.

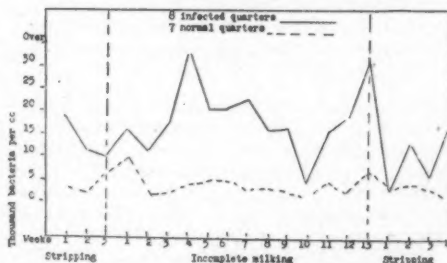
Additional Information—1. Samples which consist entirely of a purulent exudate usually will not show any alteration during incubation which will permit a differential diagnosis. This is because the sample consists entirely of a pathological exudate and, therefore, is not suitable for the Hotis test. Unfortunately, a microscopic examination also often fails to reveal the causative agent. Adding a small amount of such purulent exudate to milk from a negative quarter will often provide the proper conditions for the development of a differential reaction in the Hotis test.

2. Hotis samples that are yellow and completely coagulated are to be classified as *positive for mastitis* only when a microscopic examination reveals typical streptococci. Frequently, however, such samples reveal a profusion of tiny diplococci. These are contaminant.

Coliform organisms produce in the Hotis sample various shades of green to yellow and upon inverting the vial several times gas is released in the form of tiny bubbles which rush upward. Ordinarily, a reaction of this type suggests faulty sampling, but occasionally coliform organisms actually become resident in the udder and may cause both acute and chronic mastitis. Cases of coliform mastitis should be diagnosed when gas is found in the Hotis sample and when upon microscopic examination leucocytes are found and bacilli or rod-like organisms are the only bacteria encountered.

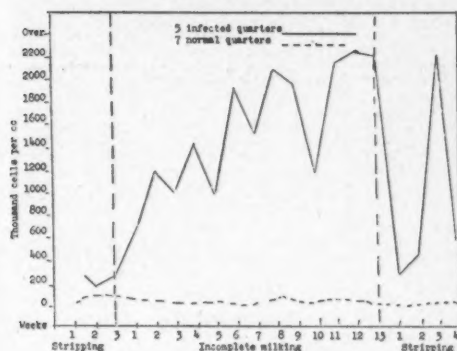
GRAPH I

The Effect of Leaving About Two Pounds of Milk in the Udder at Every Milking on the Bacteria Count of Milk From Normal Quarters and Quarters Infected With *Streptococcus agalactiae*



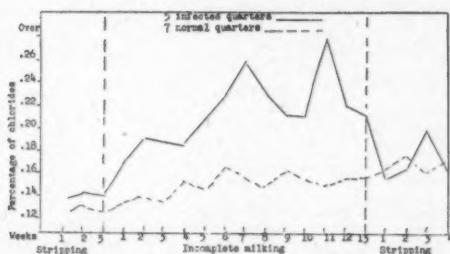
GRAPH II

The Effect of Leaving About Two Pounds of Milk in the Udder at Every Milking on the Cell Count of Milk From Normal Quarters and Quarters Infected With *Streptococcus Agalactiae*



GRAPH III

The Effect of Leaving About Two Pounds of Milk in the Udder at Every Milking on the Chloride Content of Milk From Normal Quarters and Quarters Infected With *Streptococcus Agalactiae*



There is a prevalent misconception that penicillin is the drug of choice for the treatment of all forms of mastitis. This has led to the promiscuous use and consequently to failures in those cases of mastitis caused by bacterial agents for which penicillin has no specificity. Because of this, penicillin has come in for considerable unwarranted condemnation. This is indeed unfortunate, for penicillin is a specific for the treatment of chronic mastitis caused by *Streptococcus agalactiae*; if used properly, penicillin is moderately effective against *Staphylococcus aureus* infections; and, it has little or no value for the treatment of mastitis caused by Gram-negative bacteria.

We have encountered cases of both acute and chronic mastitis in which coliform organisms, *Pseudomonas aeruginosa*, or *Corynebacterium pyogenes* were responsible. These pathogens are not affected by penicillin and, therefore, its use in mastitis caused by them is not indicated. Mastitis caused by the coliform-group of organisms usually responds to streptomycin; 0.5 gram dissolved in 50 cc of sterile, pyrogen-free, distilled water and infused into the affected quarter every 12 hours over a four-day period. Cases of mastitis caused by *Pseudomonas aeruginosa* or *Corynebacterium pyogenes* have not responded to intramammary therapy with any of the therapeutic agents available to date.

Twelve years of research in bovine mastitis has provided ample evidence that differential diagnosis is a prerequisite for rational therapy of this disease complex. These studies have also shown that permanent improvement in the mammary gland cannot be anticipated unless complete removal of the pathogenic organisms in question is obtained. From time to time new drugs have been placed on the market and extravagant claims have been made concerning their therapeutic potentialities. In the specific case of mastitis, drugs which were incapable of completely removing the pathogenic organisms from the udder did not remain in vogue long after being subjected to critical test.

Up to the present, we have no data which would suggest that differential diagnosis may be neglected or that permanent benefit can be derived from the use of drugs which fail to remove the specific infectious agent from the mammary gland.

O. W. SCHALM and KENNETH G. MCKAY.

The following table illustrates: (1) The inefficiency of field tests as compared to the Hotis test and microscopic studies for the detection of *Streptococcus agalactiae*, and (2) Economic returns to be gained through better management, which minimizes udder destruction as indicated in last column.

Type herd	No. known infected cows based on Hotis test and microscopic studies (1)	Strip-cup test		Brom cresol purple pH test		Palpation for scar tissue		Cases of acute mastitis (%)	Cows slaughtered because of advanced udder injury (%)
		Number made	Positive * (%)	Number made	Positive * (%)	Distinct * (%)	Marked * (%)		
Poorly managed	92	812	(2) 43.3	739	59.9	21.7	54.3	33.7	34.7
Well managed	60	1006	(3) 12.5	964	29.1	25.0	16.6	15.0	3.3

*Percentage detected compared to Hotis test and microscopic studies.

(1) Infected with *Streptococcus agalactiae*.

(2) Many clots, shreds, and often thick pus, were usually found.

(3) As a rule, a positive test was limited to a few flakes in the first stream of milk.

FIVE VETERINARY COLLEGES OPENED

To meet the increasing need for veterinarians five new veterinary colleges have opened. The University of Georgia, University of Minnesota, University of Missouri,

Tuskegee Institute and Oklahoma A & M College. The Universities of California and Illinois will accept freshmen in veterinary medicine this fall.

California State Veterinary Medical Association

Constitution and By-laws

The California State Veterinary Medical Association's By-Laws were rewritten by the Ways and Means Committee, under the chairmanship of Dr. Carl E. Wicktor, and submitted to the Executive Committee meeting, Friday, June 18, at San Luis Obispo, and presented to the business meeting June 19. The membership voted to accept the new by-laws as they stood and they become effective January 1, 1949.

CONSTITUTION

ARTICLE I

Name

This association shall be incorporated and known as the California State Veterinary Medical Association and shall remain a nonprofit organization in fact.

ARTICLE II

Objectives

The purpose of this association shall be to promote veterinary science; to propagate a fraternal feeling among its members; to protect the rights and privileges of veterinarians, particularly those of the State of California; and to elevate the standards of the profession generally in scientific intercourse.

ARTICLE III

Officers and Election

Section 1. The elective officers of this association shall be a president, first vice-president, second vice-president, third vice-president, treasurer, and one Executive Committee member. Each elective officer shall hold office for one year following his installation at the annual meeting or until his successor has been installed.

Section 2. There shall be an executive secretary employed by the Executive Committee or elected by the association. In either event, he shall have no voting power in the Executive Committee.

Section 3. A delegate and an alternate to the House of Representatives of the American Veterinary Medical Association shall be elected in conformity with the provisions of the Constitution and By-laws of the American Veterinary Medical Association.

Section 4. The elective officers and the immediate past president shall constitute the Executive Committee.

Section 5. The Board of Governors shall consist of the president, first vice-president, and immediate past president.

Section 6. The elective officers shall be known as the corporate officials of the association and shall be charged with the duty of complying with the United States and California laws governing corporations.

ARTICLE IV

The duties of officers, requisites of membership, times and places of meetings, and such other regulations as may be necessary for the government of this association shall be provided for in the By-laws.

ARTICLE V

Amendments

All proposals for alteration of the Constitution shall be presented in writing. Alterations proposed shall not be acted upon until referred to the Executive Committee and presented anew by them to the association. No change in the Constitution shall be acted upon unless the members are notified of such changes in writing at least ten days previous to any action thereon. A two-thirds vote of members present shall be required for such alteration.

BY-LAWS

ARTICLE I

Meetings

Section 1. The annual meeting shall be held in June at such place as may be decided upon by the Executive Committee or by vote of the association.

Other meetings of the association may be held at such times and places as may be decided upon by the Executive Committee or by vote of the association.

Section 2. Special meetings shall be called by the president, or in his absence by the first vice-president, upon written request of twenty-five members in good standing, specifying the particular object of such meeting. The president, if he deems it necessary, may call special meetings. All members in good standing shall be given not less than three days' notice of all special meetings.

ARTICLE II

Quorum

Twenty-five members in good standing shall constitute a quorum for the transaction of business of the association.

ARTICLE III

Order of Business

1. Roll call.
2. Reading of minutes.
3. Unfinished business.
4. Annual report of executive secretary.
5. Annual report of treasurer.
6. Reports of committees (Executive, Standing, Special).
7. Admission of new members.
8. Nomination and election of officers.
9. New business.
10. Reading of papers and discussions of same.
11. Installation of officers.
12. Adjournment.

ARTICLE IV

Duties of the President

Section 1. It shall be the duty of the president to preside at all meetings and preserve order and decorum.

Section 2. The president shall appoint a sergeant-at-arms, committees as authorized in article XIII of the By-laws, and such other committees as may be necessary.

Section 3. The president shall fill unexpired terms of any vacated, non-elective officers, treasurer, and elected Executive Committeeman. Such appointments must have the approval of a majority of the Executive Committee.

Section 4. The president shall be a member of the Executive Committee and Board of Governors with the same franchise as other members.

ARTICLE V

Duties of the First Vice-President

Section 1. It shall be the duty of the first vice-president to perform the duties of the president in case of the latter's absence or inability to serve or conduct the affairs of the association, except as provided in section 3 of article IV. He shall otherwise assist the president as the president may from time to time determine.

Section 2. (a) The first vice-president shall act as chairman of the Executive Committee and Board of Governors.

(b) It shall be the duty of the first vice-president to notify all members of the Executive Committee and/or the Board of Governors at least three days in advance of the time and place of any meeting of such Committee or Board. He shall also announce the time and place by bulletin at the association meetings.

Section 3. The first vice-president shall hold in safe keeping the bonds given in trust by the executive secretary and treasurer.

ARTICLE VI

Duties of the Second Vice-President

It shall be the duty of the second vice-president to perform the duties of the president and/or first vice-president in the event of their absence or inability to serve, except as provided in section 3 of article IV. He shall also be chairman of the Committee on Program.

ARTICLE VII

Duties of the Third Vice-President

It shall be the duty of the third vice-president to perform the duties of the president and/or the first

vice-president and second vice-president in their absence, except as provided in section 3 of article IV. He shall also be chairman of the Committee on Membership and American Veterinary Medical Association Affairs.

ARTICLE VIII

Duties of the Treasurer

Section 1. It shall be the duty of the treasurer to put all moneys of the association into one fund to be appropriated for the payment of current expenses and for such other purposes as the Executive Committee may direct.

Section 2. All moneys shall be deposited in a bank of unquestionable responsibility in the name of the California State Veterinary Medical Association.

Section 3. It shall be the duty of the treasurer to hold in safe keeping all bonds and other securities of the association.

Section 4. The treasurer shall countersign all checks drawn upon vouchers which have been approved and signed by at least two members of the Executive Committee. Such vouchers shall be serially numbered and contain full details of the nature of expenditure.

Section 5. The treasurer shall be bonded with a reputable company in the amount of \$5,000. The premium of such bond shall be paid by the association.

Section 6. At each annual meeting, or at such other times as may be authorized by the Executive Committee, the treasurer shall render, to the association, a detailed, written report of his receipts and disbursements or, in his absence, submit a statement for presentation.

ARTICLE IX

Duties of the Executive Committee

Section 1. The Executive Committee shall meet prior to all meetings of the association and shall hold such other meetings as may be necessary for the proper conduct of the business of the association. It shall be the duty of each committee member to be present at such meetings.

Section 2. The president shall call special meetings of the Executive Committee whenever he may deem it necessary.

Section 3. Five members of the Executive Committee shall constitute a quorum for the transaction of business.

Section 4. The Executive Committee shall select the date (in June) and place for the annual meeting of the association unless the date (in June) and place have been selected by the association.

Section 5. (a) It shall be the duty of the Executive Committee to examine applications for membership and make recommendations to the association, as provided in section 3 of article XV.

(b) The Executive Committee shall have the power to authorize reclassification of members as to membership status (as pertains to payment of dues). However, no change of classification shall be permitted until the end of the current year. Members so reclassified shall be notified by the executive secretary of the Executive Committee action.

Section 6. The Executive Committee shall receive from the executive secretary, at their annual meeting, a proposed budget covering all anticipated expenditures of the association for the following fiscal year. It shall be the duty of the Executive Committee to study, make such changes as are deemed necessary, and approve the budget in its final form.

Section 7. (a) The Executive Committee shall have the power to hear and determine upon all complaints, filed before it in writing, relative to improper conduct of any member of the association and shall, if it deems it advisable, summon the member so charged to appear before it to answer such written charges and make defense.

(b) If the Committee after fair and impartial trial finds the defendant guilty of all or part of the offenses as charged, said committee shall report to the association, at regular session, a summary of its findings with its recommendations. No public report of such hearings shall be divulged by any member of the Executive Committee previous to its report or recommendation to the association in regular session.

(c) The membership of the defendant shall be declared void if two-thirds of the members present at a regular session vote for his dismissal from the association. Such vote shall be by ballot only.

Section 8. The Executive Committee shall provide proper headquarters for the association.

Section 9. (a) The Executive Committee shall be

vested with the authority to select, enter into contract, and employ the executive secretary.

(b) The Executive Committee shall not enter into contract with an executive secretary for a period exceeding one year.

(c) The Executive Committee shall be vested with the authority to discharge the executive secretary if a breach of contract on his part is determined.

(d) The Executive Committee shall establish the salary and expenses of the executive secretary.

(e) The Executive Committee shall dictate the policy and duties of the executive secretary, except as otherwise provided in article XI.

Section 10. The Executive Committee shall have complete charge of the property and financial affairs of the association, including the management of all its publications.

Section 11. The Executive Committee shall have the accounts of all officers in charge of funds and property of the association audited by a qualified accountant annually or at such other times as it shall direct. The audit report shall be submitted to the association, at a regular session, after consideration by the Executive Committee.

Section 12. The Executive Committee shall report, at the annual meeting of the association, their actions which shall also include the actions of the Board of Governors.

ARTICLE X

Duties of the Board of Governors

The Board of Governors shall perform emergency duties of the Executive Committee when the latter is not in session except as provided in section 6, section 7, and section 9 of article IX, and report their action to the Executive Committee for approval.

ARTICLE XI

Duties of the Executive Secretary

Section 1. The duties of the executive secretary shall be such as are delegated by the Executive Committee or association, in regular session, and shall be such duties as are normally executed by such an office or as specifically provided for by the various provisions of this article (XI).

Section 2. The executive secretary shall attend all meetings of the association and the Executive Committee and shall keep and present all minutes of their respective proceedings.

Section 3. The executive secretary shall be custodian of all records, books, papers, and other properties of the association except those delegated to the treasurer and the first vice-president of the association.

Section 4. The executive secretary shall submit a budget to the Executive Committee, during their annual meeting, for approval.

(1) The budget shall be for the following fiscal year.

(2) Fiscal year shall be from the termination of one annual meeting to the termination of the next annual meeting.

(3) The budget shall contain the following: rentals; salaries of employees; printing, paper, and postage for office and publications; traveling expenses; and other expenditures which are anticipated.

Section 5. The executive secretary shall conduct official correspondence under the name of the association. He shall, at least ten days in advance unless otherwise provided for in the By-laws, notify all members of meetings. He shall notify officers of their elections, committees of their appointments, and their duties as provided in the Constitution and By-laws and by the president. Such notices shall be in writing or in official publications of the association.

Section 6. The executive secretary shall, with the approval of the Executive Committee, arrange for necessary accommodations for holding annual conventions.

Section 7. The executive secretary shall provide for the registration of members and visitors at all meetings.

Section 8. The executive secretary shall receive all funds paid to the association, promptly transfer such funds to the treasurer of the association and receive from the treasurer a receipt therefor. Disbursements shall be handled as provided in section 11 of this article (XI).

Section 9. The executive secretary shall review and countersign all contracts, agreements, transfers, or other instruments to which the association is a party when so authorized by the association or Executive Committee.

Section 10. The executive secretary shall carefully examine, approve or reject, by direction of the Executive Committee, all material intended as advertising or otherwise in any publication or bulletin of the association. He shall, with Executive Committee's approval, execute written contracts relating to advertising in a form so authorized by the Executive Committee.

Section 11. The executive secretary shall retain a sum approved by the Executive Committee as a petty cash fund. He shall sign and issue checks or drafts which shall be countersigned by the treasurer, and only upon vouchers approved and signed by at least two members of the Executive Committee.

Section 12. The executive secretary shall employ and/or dispense with such assistants as may be ordered by the Executive Committee. The Executive Committee shall outline the scope and duties of such special employees acting under the direction of the executive secretary.

Section 13. The executive secretary shall give bond in such sum as may be fixed by the Executive Committee. The premium on such bond shall be paid by the association.

Section 14. The executive secretary shall, at annual meetings or as otherwise requested by the Executive Committee, render a report of his activities and the state of the association funds in his hands. This report shall be submitted to the Executive Committee for examination prior to the business meeting of the association.

ARTICLE XII

Duties of the Sergeant at Arms

The sergeant at arms shall admit only members in good standing or others properly vouched for by the Executive Committee to all business sessions of the association and such other sessions as the Executive Committee may direct.

ARTICLE XIII

Standing Committees

Section 1. In addition to the Executive Committee, there shall be three standing committees of the association.

Section 2. Committee on Program—This committee shall be composed of five members. The second vice-president shall be the chairman. The remaining four members shall be appointed by the president.

Section 3. Committee on Legislation—This committee shall be composed of five members and shall be appointed by the president of the association biennially in odd numbered years.

Section 4. Committee on Membership and American Veterinary Medical Association Affairs—This committee shall be composed of five members. The third vice-president shall be the chairman. The remaining four members shall be appointed by the president. Such appointments shall be representative of the different sections of the State.

ARTICLE XIV

Duties of Standing Committees

Section 1. It shall be the duty of the Committee on Program to arrange for the presentation of papers, lectures, and demonstrations at the annual meeting. It shall also be the duty of this committee to cooperate with other agencies in arranging programs for the annual veterinary conference.

Section 2. It shall be the duty of the Committee on Legislation to propose and secure such new legislation as the association directs and to defend the Practice Act when changes which are detrimental to the veterinary profession or livestock owners are desired from outside sources.

Section 3. (a) It shall be the duty of the Committee on Membership and American Veterinary Medical Association Affairs to work with the American Veterinary Medical Association and the resident state secretary and to report on matters of interest to the association.

(b) It shall be the duty of the Committee on Membership and American Veterinary Medical Association Affairs to work with the executive secretary and assist him in obtaining new members and reinstatement of lapsed members.

(c) It shall be the duty of the Committee on Membership and American Veterinary Medical Association Affairs to cooperate with the American Veterinary Medical Association on all matters pertaining to ethics.

ARTICLE XV

Candidates for Membership

Section 1. (a) Applicants must be of good moral character and possess reputable professional standards.

(b) Applicants must be graduates of a college of veterinary medicine which has been approved by the American Veterinary Medical Association.

Section 2. All applications for membership shall be submitted on a form approved by the Executive Committee and provided by the association. Applicants shall be duly vouched for by two members in good standing.

Section 3. All applications for membership must be presented or mailed to the executive secretary for filing. It shall be the duty of the executive secretary to publish the names of such applicants in the official publication of the association or, in the absence of such a publication, he shall send a letter to each member in good standing in the association setting forth the name or names of the applicant or applicants proposed for membership. If no written objections are received by the executive secretary within thirty days after notification, as provided above, the applicant or applicants shall automatically become members of the association. If an objection to any applicant is received in writing by the executive secretary, the application shall then be referred to the Executive Committee at the next regular or adjourned meeting of the association for consideration and recommendation to the association at the regular or adjourned meeting. The applicant shall become a member if two-thirds of the members present at the regular or adjourned meeting vote by ballot in favor of accepting the applicant.

ARTICLE XVI

Membership and Dues

Section 1. Active membership shall comprise the following classifications.

(1) Members employed full-time by the United States Government, State of California, any County of California, and City of California, or in teaching or research, and not in any way engaged in private practice, shall pay annual dues of \$12.50.

(2) All other members (not provided for under subsection (1), section 1 of article XVI) shall pay annual dues of \$25.00.

(3) In order that the dues shall run from January first of each year, the following amount shall be remitted with each application filed during a given month:

Month	Research	All Other
January	\$12.50	\$25.00
February	11.46	22.92
March	10.42	20.83
April	9.38	18.75
May	8.34	16.67
June	7.29	14.58
July	6.25	12.50
August	5.21	10.42
September	4.17	8.33
October	3.13	6.25
November	2.09	4.17
December	1.05	2.09

Section 2. Junior members are those who qualify under section 1 of article XV and shall comprise graduates who joined the association within one year of graduation. They shall remain junior members for one year only and must then become active members, as provided in section 1 of this article (XVI). They shall have all the privileges of active members. The dues of junior members shall be \$5.00 per year.

Section 3. Nonresident members are those who qualify under section 1 of article XV and reside or practice entirely outside the territorial limits of the State of California. They shall have all the rights and privileges of the association. The annual dues shall be \$5.00.

Section 4. Retired members who qualify under section 1 of article XV shall comprise those who have entirely ceased to practice veterinary medicine in any form whatsoever. They shall have all the rights and privileges of active members. The annual dues of retired members shall be \$5.00.

Section 5. Life members who qualify under section 1 of article XV shall be those who have been exempted from paying dues by vote of the association.

tion. They have all the rights and privileges of active members. Proposals for life membership must be referred to the Executive Committee for recommendation and can only be so elected by vote of the association.

Section 6. (a) Honorary members shall comprise men or women who have distinguished themselves in veterinary medicine or other sciences. Proposals for honorary membership must be made in writing by members of the association, giving the qualifications of the candidate, and shall be referred to the Executive Committee for consideration and recommendation before they can be voted upon by the association. A two-thirds vote by ballot of the members present shall be required for election to honorary membership.

(b) Honorary members shall be exempt from all dues and have the rights and privileges of active members except the right to vote and hold office.

Section 7. Only members who have paid current dues or are in arrears in dues not more than five months shall have the right to vote and be entitled to all the rights and privileges of the association.

ARTICLE XVII

Memberships—Arrears and Reinstatements

Section 1. All members six months in arrears, after due notice, shall be automatically dropped from the rolls by the executive secretary. Their names shall, however, be included in the annual report of the executive secretary. The names of such members dropped from the rolls shall be referred to the Committee on Membership and American Veterinary Medical Association Affairs for investigation and possible reinstatement.

Section 2. All persons subject to the provisions of section 1 of this article (XVII), may be reinstated within the year upon written application for reinstatement, when the application is accompanied by the payment of current dues, provided such application is considered favorably by the Executive Committee.

ARTICLE XVIII

Nomination and Election of Officers

Nomination, election, and installation of officers shall take place at the annual meeting of the association.

ARTICLE XIX

Suspension of By-laws

Section 1. The By-laws may be temporarily suspended, for the purpose of changing the order of business, by a two-thirds vote of the members present.

Section 2. The By-laws may be temporarily suspended, for the purpose of facilitating important business of the association, by a two-thirds vote of members present. Such suspension of the By-laws, however, must be of such nature that it does not interfere with the vested rights of any member.

ARTICLE XX

Amendments

All proposals for alteration of the By-laws shall be presented in writing. Alterations proposed shall not be acted upon until referred to the Executive Committee and presented anew by them to the association. No change in the By-laws shall be acted upon unless the members are notified of such changes in writing at least ten days previous to any action thereon. A two-thirds vote of members present shall be required for such alteration.

ARTICLE XXI

Code of Ethics

The Code of Ethics shall be the same as the American Veterinary Medical Association, substituting the name "California State Veterinary Medical Association" for the name "American Veterinary Medical Association" wherever it appears in that Code.

DO YOU BELONG TO CSVMA?

Your membership will help build a bigger and better State association. Today, it is the organized groups which are successful and do legion for their members. Association has the power of concerted action, which is a valuable "big stick."

The California State Veterinary Medical Association offers two group insurance policies of a type never before presented to veterinarians.

The All-Risk policy covers premises, business, malpractice, animals under care and custody, products and contractual liability.

The Accident and Health policy covers total disability, partial disability, sickness, accidental death, dismemberment, and loss of sight by accident. Hospitalization is not required for monthly recompense of \$200 per month.

The Association offers social contacts, a secretary's office which is a clearing house for all problems, the advancement of favorable legislation, two conventions a year and a program of public relations to increase the esteem of the public for the veterinarian.

We hope you belong.

EQUINE PRACTICE ON FARMS

(Continued from Page 19)

twenty to thirty days previously have been used to control the disease. Whole blood has been used because it is more convenient to give a transfusion in practice than to obtain the serum or plasma. These seem to give some immunity but do not protect mares already infected. Repeated doses are advisable for susceptible mares until parturition.

Vaccine made from livers of positive fetuses has more recently been advised by Dimock. He has not claimed immediate success with its use, but suggests using it with the convalescent serum. Dr. H. S. Cameron of the University of California at Davis, who diagnosed the recent cases in California, made a liver vaccine which was used, and in some cases convalescent serum was available.

With the increase in horse breeding in California, virus abortion in mares will probably increase in importance. It is advisable to treat every case of abortion in mares as if it were contagious, at least until a diagnosis is made, and to make every effort to get a definite diagnosis.

AVMA Officers 1948-1949

Officers elected for the ensuing year were:
C. P. Zepp, Sr., CORN'19, New York City, president elect
Gen. James A. McCallam, V.C., U.S.A., UP'17, Washington, D.C., first vice-president
R. C. Dunn, OSU'11, College Station, Texas, second vice-president
R. Sugg, AP'17, Auburn, Alabama, third vice-president

E. F. Johnston, ONT'22, Carp, Ontario, fourth vice-president
L. J. Goss, OSU'34, New York City, fifth vice-president
W. A. Young, ISC'19, Chicago, Illinois (re-elected), treasurer
Leslie M. Hurt, ISC'04, president-elect, was installed as president for the 1948-1949 association year.

OPPORTUNITIES

D. V. M. Wanted

Opening for licensed veterinarian. San Francisco. SKyline 1-3242.

Dr. Irving M. Roberts, East Oakland Veterinary Hospital, 9884 MacArthur Boulevard, Oakland, desires assistant D.V.M. TRinidad 2-8394 or TWinoaks 3-0105.

Veterinarian wanted—Small Animal Hospital. Full time—room available for single man if desired. Contact Dr. Burton F. Pike, Blue Cross Dog and Cat Hospital, 2665 E. Pacific Coast Highway, Long Beach, Calif.

Hospital for Sale

Small Animal Hospital in Los Angeles. Fully equipped. Handles 55 animals. Grossing \$30,000. Full price, including valuable real estate, \$35,000. 3004 16th St., rm. 208, San Francisco.

Ill health forces retirement. 20 miles from Oakland, good territory and climate. Mixed or small exclusively. One acre, 6-room modern house and hospital with kennels for 30 animals and room to add more. Will sell new house furniture and hospital equipment. Contact your secretary's office.

Mixed practice, 3-bedroom home and clinic. Northern California. Contact Dr. E. R. Holand, Fortuna, Calif.

Equipment for Sale

X-Ray—Fisher Dental X-Ray. Good working condition. \$150. Phone RUgby 6-2756. Dr. H. G. Pedersen, 6857 Reseda Blvd., Reseda, Calif.

Position Wanted

Would like position in Small Animal Hospital as assistant with privilege of buying in if agreeable to both parties in due time, or would consider leasing small hospital. Contact your secretary's office.

1943 O.V.C. graduate, married, two children, wishes position in progressive small animal hospital leading to purchase or partnership if desired. Also interested in leasing hospital now operating. Suitable living quarters necessary. Reply in care of THE CALIFORNIA VETERINARIAN.

Can Assist Veterinarian

Position wanted in small animal hospital or assisting veterinarian. College education, experience office work. Familiar with care and nursing horses. Alice Druskin, phone FIllmore 6-1319. San Francisco.

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Woman wishes to help in Small Animal Hospital or kennel. No experience. Willing to learn. Prefers Los Angeles County. Miss Mary H. Tuoby, Route 3, Box 897, Lancaster, Calif.

Location suitable for busy mixed or large practice wanted by experienced practitioner who would consider leasing established practice, pioneering good territory or trading southern California ranch for going practice. Send replies care Secretary.

All ads 5c a word, no charge for name and address, or mail handled by the secretary's office. Payment in advance, copy in Nov. 15 for next issue.

OPENINGS FOR VETERINARIANS

Excerpts From: United States Department of Agriculture, Agricultural Research Administration, Bureau of Animal Industry, Washington 25, D. C.

"A number of openings for veterinarians exist on the foot-and-mouth disease program in Mexico, on meat inspection work . . . and on tuberculosis and Bang's disease control and eradication activities in the United States . . . in Mexico . . . official headquarters would be designated as Mexico City . . ." with almost constant travel "in accordance with the needs of the program."

"Legislation enacted by the last session of Congress increases the salaries of veterinarians in the amount of \$330 per annum. The following salaries now prevail for new appointees":

Grade	Salary Per Annum
P-2 (One yr. ex. since grad.)	\$3,727.20
P-1 (Not one yr. ex. Raise to	
P-2 after 4 mos. sat. service.)	2,974.80

An assignment in Mexico is grade P-2 despite experience, and quarters, and cost of living amounting to approximately \$1,390 per annum without dependents or \$2,025 with dependents is added to base salary. Also field employees have a six-day, 48-hour week with about \$800 overpay per annum (grade P-2). The Bureau pays travel expenses to and from Mexico provided it is agreed in writing that the stay in Mexico will be for at least one year unless circumstances beyond control intervene.

A per diem allowance is made while on a travel status in lieu of subsistence expenses.

If you are interested in applying for an appointment applications should be executed in duplicate on Standard Form 57, available from Personnel Division of the Bureau in Washington. Both copies should be forwarded to Personnel Division of this Bureau. For further information contact your secretary's office.

"Pullorum antigen for diagnostic purposes heretofore produced under U. S. Patent No. 1,816,026, by special permission of the Secretary of the U. S. Department of Agriculture is now under supervision of the Virus-Serum Control Division and must be produced under U. S. Veterinary License."

REPRODUCTIVE DISORDERS IN DAIRY COWS

By DR. R. C. KLUSSENDORF, *Chicago, Ill.**

From the standpoint of the veterinary practitioner, I believe that reproductive disorders in dairy cattle must be considered on a basis a little different from that of most college courses. It is convenient to class the cases in three groups: those that show no heat periods; those with irregular heat periods; and those that show regular heat but fail to conceive. When there are cows in all three classes, then the bull must be considered.

In addition, the way to get a good breakdown on reproductive problems is to train the livestock owner to keep breeding records. He will then know when his cows are beginning to be out of balance and if he will call you at that stage of the game the problem will be clearer, recoveries better, and the over-all picture more favorable.

We were able to maintain reproductive efficiency most successfully in herds on which we had arranged to make monthly checks. We could check for pregnancies and had an opportunity to examine each cow after calving and before service. If unsatisfied with the involution of the uterus or the tone of the reproductive tract we could recommend skipping a period before rebreeding, and treatment for the interim.

Failure to recognize early pregnancy may prove very embarrassing. Breeding records can be wrong, and a corpus luteum should not be dislodged until you are certain the cow is open.

The veterinarian who is to work with dairy cows must learn to diagnose most pregnancies in from twenty-five to forty days, very readily, and it should be possible to judge the date of service within five days. The best way to learn is to start at sixty to seventy-five days and work down.

An open cow that fails to show heat may have pyometra. It usually appears after parturition and before service, but may also occur after service. In such cases we suspect trichomoniasis.

Other reasons for absence of heat are malnutrition, old age, and the presence of a mummy.

The best treatment for pyometra at present seems to be stilbestrol, and one dose of 20 mg. should be enough. For cows with a mummified fetus, 20 or 30 mg. of stilbestrol should remove the mummy from the uterus, although it may not discharge it from the vagina. It is a simple matter to remove it from the cervix or vagina and safer than overdosing with stilbestrol.

I do not go for routine use of stilbestrol in any and all reproductive disorders. There is a tendency to use it generously because it is cheap, but until we understand its action not only on the reproductive organs but on

the entire body, and particularly the glands, we should be cautious.

Some cows apparently ovulate without visible heat. These can be spotted, if examined frequently, by finding a corpus luteum first in one ovary and then in the other; ovulation must have occurred. Interrupting the cycle by dislodging the corpus luteum usually leads to a noticeable heat period, when the cow can be bred. Stilbestrol may produce a recognizable heat, but too often without ovulation.

Pregnancy can also cause irregular intervals between heat periods. Some cows only show one heat during pregnancy, but others come in heat almost at regular intervals.

Cystic ovaries cause intervals shorter than normal, perhaps two weeks, and heat may last three or four days. The shorter the interval, the longer the heat, and the more serious the condition. Rupture of cysts often results in conception.

Then we have cows that apparently conceive and later resorb the fetus, suggesting trichomoniasis. Here the regular monthly check may provide information. In this group we will find the breeding history reasonably normal up to a point, and from there on the heat periods are thirty to a hundred days apart. If it's six or nine weeks, there may have been unobserved heat, and the herd history will be of help.

The time to examine cows for trichomonads depends on circumstances. From nine to twelve days after exposure is probably best. After that time, the infection has probably moved into the uterus and not much will be found in the vagina, except periodically, about eighteen days after heat.

Cows that are low in vigor, old, restless, or have not had time to rebuild their systems between calvings, may show irregular heat periods without other organic evidence of trouble. In this case, we build them up.

The cow that shows regular periods is more likely to respond than those in the other two groups. Such cases are common in two-year-old heifers that have not been properly nourished and thus have failed to reach maturity. When these mature, they will be ready for reproduction.

Also in this class are animals with abnormal organs, ovarian adhesions, cervicitis, vaginitis, or a combination. Occasional animals apparently ovulate too early or, more often, too late in the cycle to permit viable egg and sperm to come together.

One other condition, which is not likely to be recognized until slaughter, is the denuded horn.

*Condensed by M. K. Dunlap from a transcription of the talk presented at the Midwinter Conference of the CSVMA.

LOCAL ASSOCIATIONS AND COMMITTEES

Bay Counties Veterinary Medical Association

President, Dr. R. P. Schwartz.
Vice-President, Dr. G. P. Bertetta.
Secretary-Treasurer, Dr. George E. Martin.
 530 Stockton Ave., San Jose.
Executive Committee, Dr. S. T. Michael, Dr. N. E. Clemens.
 Meetings second Tuesday of the month.

Central California Veterinary Medical Association

President, Dr. Alex Robertson.
Vice-President, Dr. Max Coons.
Secretary-Treasurer, Dr. Thomas Eville.
 Rt. 1, Box 136H, Fresno.
 Meetings fourth Tuesdays of the month.

East Bay Veterinary Medical Association

President, Dr. Nels E. Clemens.
Vice-President, Dr. R. J. Tompkins.
Secretary-Treasurer, Dr. O. A. Soave.
 5666 Telegraph, Oakland.
 Meetings bi-monthly, fourth Wednesday.

Northern San Joaquin Valley Veterinary Medical Association

President, Dr. R. L. Collinson.
Vice-President, Dr. L. D. Meyers.
Secretary-Treasurer, Dr. I. N. Bohlender, Box 588, Turlock.
Executive Committee: Officers, and Dr. F. H. Saunders, and Dr. W. A. Browne.
 Meetings fourth Wednesday of the month.

Southern California Veterinary Medical Association

President, Dr. W. K. Riddell.
Vice-President, A. Mack Scott.
Secretary-Treasurer, Dr. H. I. Ott,
 10326 E. Artesia, Bellflower.
 Meetings third Wednesday of the month.

Peninsula Veterinary Medical Association

President, Dr. William Bigelow.
Secretary-Treasurer, Dr. E. W. Paul.
 Box 866, Redwood City.
 Meetings, third Monday.

Redwood Empire Veterinary Medical Association

President, Dr. Howard E. Clarke.
Vice-President, Dr. Harvey W. Campbell.
Secretary-Treasurer, Dr. Charles D. Stafford.
 Novato.

Meetings second Thursday of every other month as of Jan. '48.

Sacramento Valley Veterinary Medical Association

President, Dr. H. S. Cameron.
Vice-President, Dr. Philip A. Lee.
Secretary-Treasurer, R. C. Goulding.
 11511 Capitol Ave., Sacramento.
 Meetings fourth Friday of the month.

San Diego County Veterinary Medical Association

President, Dr. L. F. Conti.
Vice-President, Dr. H. G. Rockwell.
Secretary-Treasurer, Mitchell Smith.
 3740 Rosecrans Blvd., San Diego.
 Meetings third Tuesday of the month.

Tri-Counties Veterinary Medical Association

President, Dr. C. H. Colton.
Secretary-Treasurer, Dr. E. H. Houchin.
 40 W. Santa Clara, Ventura.
 No regular meeting dates.

Orange Belt Veterinary Medical Association

President, Dr. F. M. Brennan.
Vice-President, Dr. Robert Philbrick.
Secretary-Treasurer, Dr. James R. Ketchersid, 666 East Highland Ave., San Bernardino.
 Meetings second Monday of the month.

CALIFORNIA STATE VETERINARY

Executive Committee

Chairman F. P. Wilcox, 808 N. Spring St., Los Angeles.
 S. T. Michael, 2500 16th St., San Francisco.
 Oscar J. Kron, 1386 Golden Gate Ave., San Francisco.
 Floyd White, 3rd and Grand Avenue, San Rafael.
 Charles H. Reid, 217 Pantages Building, Hollywood.
 E. F. Sheffield, 3895 Pacific Highway, San Diego.
 C. E. Wicktor, 203 Administration Bldg., Union Stock Yards, Los Angeles.

Program Committee

Chairman Floyd White, 3rd and Grand Ave., San Rafael.
 Dean C. Lindley, 67 Benton Way, San Luis Obispo.
 Fred Pulling, Jr., Box 608, Atascadero.
 M. A. Thom, 959 South Raymond, Pasadena 2.
 O. W. Schalm, 230 Cambridge, Berkeley.
 Rex Taylor, 1800 N. 4th St., San Jose.
 C. D. Stafford, P. O. Box R 2, Novato

Membership and AVMA Affairs Committee

Chairman E. F. Sheffield, 3895 Pacific Highway, San Diego.
 H. E. Clarke, 836 5th St., Petaluma.
 C. J. Cook, 914 Tuolumne Blvd., Modesto.
 M. C. Coons, 1546 East Front St., Selma.
 S. A. Fuller, Ferndale.
 W. W. Brimer, 2528 Clement Ave., Alameda.
 R. C. Goulding, 11511 Capitol Ave., Sacramento.
 E. H. Houchin, 40 West Santa Clara St., Ventura.
 N. L. McBride, Jr., 384 S. Raymond Ave., Pasadena.
 Charles H. Reid, 217 Pantages Bldg., Hollywood.
 A. Mack Scott, 7131 Santa Monica Blvd., Hollywood.
 C. M. Sepponen, 3701 H St., Sacramento.
 And all secretaries of local associations.

Ways and Means Committee

Chairman N. E. Clemens, 183 Castro St., Hayward.
 Harold Groth, 2600 S. El Camino Real, San Mateo.
 P. C. Guyselman, 1041 Broadway, Burlingame.
 E. E. Jones, 1451 Mirasol St., Los Angeles.
 Herbert Ott, 10326 E. Artesia, Bellflower.
 A. M. McCapes, Box 11, San Luis Obispo.

MEDICAL ASSOCIATION COMMITTEES

Legislative Committee

Chairman H. W. Campbell, 2001 Sonoma Highway, Santa Rosa.
 E. C. Baxter, 816 S. San Pedro St., Los Angeles.
 Leo Henrich, Box 22, Tulare.
 H. W. C. Lichtenwalter, 1012 19th St., Sacramento.
 C. J. Parshall, 530 Fulton St., San Francisco.
 W. K. Riddell, 3233 W. Florence Ave., Los Angeles.

Resolutions Committee

Chairman E. G. LeDonne, 6200 Rockwell St., Oakland.
 H. S. Cameron, University Farm, Davis.
 L. E. Pike, 1220 Bennett Ave., Long Beach.

Disease Control Committee

Chairman J. R. Beach, Dept. of Vet. Sci., U. C., Berkeley.
 G. K. Cooke, Health Dept., City Hall, Berkeley.
 N. M. Wisselmann, 1246 Madison Ave., Bakersfield.
 E. C. Morris, 110 N. Oak St., Ukiah.
 B. B. White, 1841 Ninth Ave., Sacramento.

Humane Organizations Committee

Chairman Eugene C. Jones, 9088 Santa Monica Bldg., West Hollywood.
 R. H. Walker, P. O. Box 272, Pleasanton.
 Richard L. Stowe, 2500 16th St., San Francisco.
 C. H. Colton, 1909 State St., Santa Barbara.

Committee on History

Chairman J. M. Arburua, 26 Fell St., San Francisco.
 J. L. Tyler, 211 N. Washington Ave., Whittier.
 C. M. Haring, 2405 Hillside Ave., Berkeley.

State Committee on Ethics

Chairman C. E. Wicktor, 203 Administration Bldg., Union Stock Yards, Los Angeles.
 L. O. Henrich, Box 22, Tulare.
 W. K. Riddell, 3233 W. Florence Ave., Los Angeles.

Delegates to AVMA

Delegate J. M. Arburua, 26 Fell St., San Francisco.
Alternate Delegate E. F. Sheffield, 3895 Pacific Highway, San Diego.

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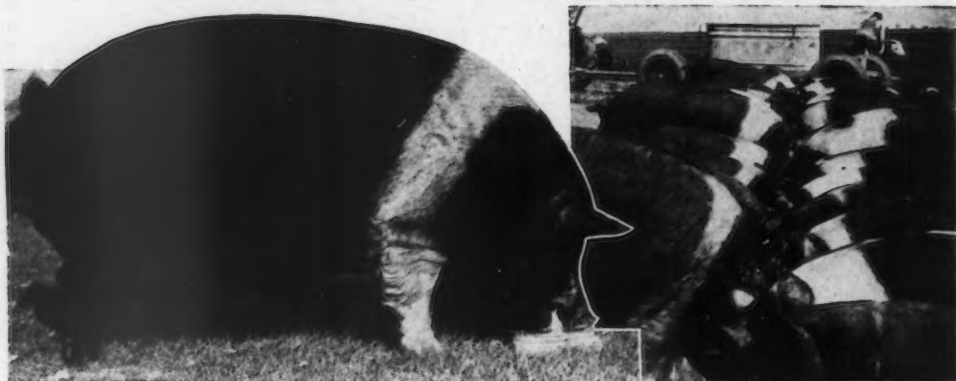
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All inquiries should be addressed to Mr. Charles S. Travers, Executive Secretary, California
State Veterinary Medical Association, 3004 16th Street, San Francisco, or direct to the

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6
Letters
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in

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Jen-Sal
C·B·G

Jen-Sal
D·C·M

C·B·G



Use C.B.G. in uncomplicated milk fever—and in hypocalcemic syndromes of other species—where immediate systemic saturation with a maximum therapeutic dose of readily ionizable calcium is indicated.

C.B.G. contains 25.7% Calcium Borogluconate.

Box of 12—250 cc. at\$6.00
Box of 12—500 cc. at 8.00

D·C·M



Use D.C.M. in the hypocalcemic syndromes—milk fever, grass tetany, eclampsia, etc., where concurrent magnesium deficiency may be a complicating factor.

D.C.M. contains 3.7 ounces of Calcium and .66 ounce Magnesium Borogluconate with 2.75 ounces of C.P. Dextrose per 500 cc. bottle.

Box of 12—500 cc. at\$ 8.40
Three boxes—36—500 cc. at 24.44
Six boxes—72—500 cc. at 47.88

Both D.C.M. and C.B.G. contain calcium of organic origin as borogluconate under Jen-Sal's Patent No. 2,007,786

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